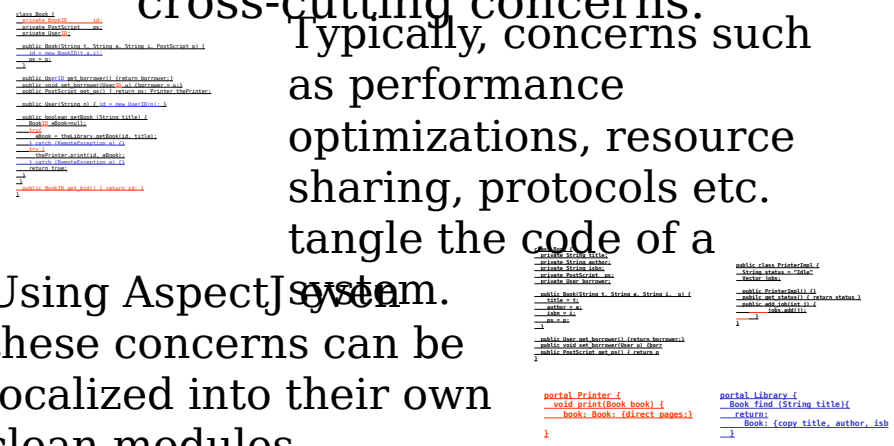
Aspect-Oriented Programming (AOP) and AspectJ™

AOP enables clean modular designs and code, even in the presence of cross-cutting concerns.

Typically, concerns such as performance optimizations, resource sharing, protocols etc. tangle the code of a system.

Using AspectJ, these concerns can be localized into their own clean modules.



Key New Ideas

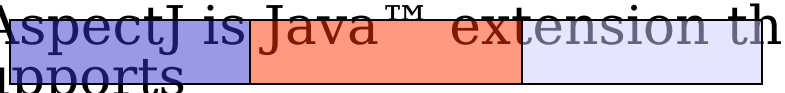
- Aspects are a new class of programming construct that:
  - break the encapsulation of traditional constructs in principled ways, to
  - make it possible to cleanly capture the structure of cross-cutting concerns.

Importance and Impact

- Software development and ongoing maintenance are significant costs for DOD.
- AOP has already resulted in:
  - code size reductions (2x to >10x)
  - efficiency improvements (20% to 10x)
  - code tangling reductions (30% to 10x)
- AspectJ and AOP used by others:
  - universities, adv'ed development labs
  - aspects for role modeling, business process, …
  - several publications show other AOP systems
  - AOP workshops attract more and

Schedule

- AspectJ is Java™ extension that supports general-purpose aspect programming.



- Initial development of AspectJ, user support mechanisms, web site, tutorials etc.
- System and collateral evolution in response to feedback, building up user community